

Appl. No. 09/706,937
Amdt. dated October 31, 2003
Request for continued examination following final Office action of June 4, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

SUB C17

Claim 1 (currently amended): An ~~improved~~ index for data that represent geographic features comprising:

~~wherein said index has a structure that includes three dimensions,~~
~~wherein a first dimension of said three two spatial dimensions whereby said data indexed by said structure includes latitude boundary information, a second dimension of said three dimensions includes longitude boundary information, said first dimension and second dimension are searchable spatially using said two spatial dimensions, the improvement comprising:~~

~~an additional dimension included in said structure of said index, whereby wherein a third dimension includes non-spatial property information, said third dimension is searchable for a non-spatial property of the geographic features represented by the data is searchable using said additional dimension.~~

B1
Claim 2 (currently amended): An ~~improved~~ index for data that represent geographic features comprising:

~~wherein said index has a structure that includes two spatial dimensions and a non-spatial third dimension,~~

~~whereby said data indexed by said structure are searchable spatially using said two spatial dimensions, the improvement comprising:~~

~~an additional dimension included in said structure of said index, whereby a non-spatial property of the data that represent the geographic features is searchable using said additional third dimension.~~

Claim 3 (original): The invention of Claim 1 or 2 wherein said structure is a *k*-d-tree index structure comprising a root node, intermediate nodes and leaf nodes, wherein each node is part of a parent-child relationship wherein each parent node includes control information from which one of at least two child nodes associated with the parent node are distinguishable based on a search key.

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Claim 4 (original): The invention of Claim 1 or 2 wherein said improved index is homogeneous.

Claim 5 (original): The invention of Claim 1 or 2 wherein said improved index is non-homogeneous.

Claim 6 (original): The invention of Claim 1 or 2 wherein said geographic features are roads.

Claim 7 (previously presented): The invention of Claim 1 wherein said non-spatial property is a rank of the geographic features represented by the indexed data.

Claim 8 (original): The invention of Claim 7 wherein said rank includes both integers and fractional values.

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Claim 9 (previously presented): The invention of Claim 2 wherein said non-spatial property is a granularity of the indexed data.

Claim 10 (previously presented): The invention of Claim 2 wherein said non-spatial property is a viewing altitude associated with the indexed data.

Claim 11 (previously presented): The invention of Claim 2 wherein said non-spatial property is a scale associated with the indexed data.

Claim 12 (previously presented): The invention of Claim 2 wherein said non-spatial property is an expiration date associated with the indexed data.

Claim 13 (previously presented): The invention of Claim 2 wherein said non-spatial property is a creation date associated with the indexed data.

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Claim 14 (currently amended): An improved index for data comprising:
~~wherein said index has a structure that includes a first dimension, a second dimension~~
~~and a third dimension two dimensions~~ whereby said data indexed by said structure are
searchable using said first and second ~~two dimensions~~, ~~the improvement comprising~~:
~~an additional dimension included in said structure of said index~~, whereby a granularity
of the indexed data is searchable using said third ~~additional~~ dimension.